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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/303,409	05/03/1999	SANDRA FREEDMAN FELDMAN	RD-26.502	8332
23413	7590	05/18/2004	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			FERRIS III, FRED O	
			ART UNIT	PAPER NUMBER
			2128	
DATE MAILED: 05/18/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/303,409

Applicant(s)

FELDMAN ET AL.

Examiner

Fred Ferris

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 19-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-16, 20 and 21 is/are allowed.
- 6) ☒ Claim(s) 19 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-16 and 19-22 are currently pending in this case. Claims 1-16, 19 and 22 have now been examined based on applicant's amendment filed 22 April 2004. Claims 20 and 21 were previously allowed. Claims 17 and 18 were previously cancelled. Claims 1-16 have now been allowed over the prior art of record. Claims 19 and 22 remain rejected.

### Response to Arguments

2. Applicant's arguments filed 22 April 2004 have been fully considered.

Regarding applicant's response to 103(a) rejections: Applicants have amended independent claims 1 and 9 to include limitations relating to generating a "**quality number Q** indicative of at least one of a number and intensity of streaks". Accordingly, the examiner now withdraws the 103(a) rejection of claims 1-16 in view of the amendment to the claims filed 22 April 2004. (see allowable subject matter below) However, the examiner maintains the 103(a) rejections of claims 19 and 22 as cited below under 103(a) rejections.

Regarding applicant's comments on motivation: The examiner asserts that, as cited below, the limitations of claims 19 and 22 are drawn to well-known digital signal processing techniques (i.e. filtering, compression, thresholds, etc.) which have been applied to processing reflected light readings from molded plastic parts. Hence, a skilled artisan would have been motivated to apply such techniques as an obvious design

choice, in addition to achieving the benefit reduced development time and cost. (see 103(a) rejection below)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**3. *Claims 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 4,314,156 issued to Kuppermann et al or UK Patent Application GB 2 288 461 A issued to Miles et al, in view of U.S. Patent 6,258,301 issued to Feuerherm et al or U.S. Patent 5,804,117 issued to Baba et al, in further view of U.S. Patent 5,254,304 issued to Adachi et al, and in further view of "The Scientist and Engineer's Guide to Digital Signal Processing", S. W. Smith, California Technical Publishing, ISBN: 0-9660176-7-6, 1997.***

Regarding independent claims 19 and 22: Both Kuppermann and Miles teach the use of spectrometers (spatially-resolved) that obtain and identify data readings via reflected light for analyzing part samples. (Kuppermann: Abstract, Summary, CL3-L5-30, CL11-L43-CL12-L37, Fig. 1, Miles: pp. 2-5, Fig. 1) Both Kuppermann and Miles further disclose a computer device for processing, filtering, analyzing, processing/post-processing and quantifying the obtained (sampled) data. (Kuppermann: Abstract, Summary, CL1-L31-65, CL3-L5-30, CL11-L43-CL12-L37, Fig. 1, Miles: pp. 2-5, Inherent in Fig. 1)

Neither Kuppermann nor Miles explicitly teach a mold with pre-determined topological features for producing plastic parts.

Both Feuerherm and Baba disclose a mold (with **cavity** and **gate**) for producing plastic parts (extruded) that has pre-determined topological features. (Feuerherm: Abstract, Summary of Invention, CL6-L35-CL7-L55, Specific Description, Fig. 1, Baba: Abstract, Summary of Invention, CL5-L7-CL6-L25, Embodiments 1-4, Figs. 4-16) The examiner notes that any part mold is three-dimensional and hence includes some type of pre-determined topological feature based on the design of the mold.

Kuppermann and Miles further do not explicitly teach simulating a streaking effect in molded plastic parts.

Adachi teaches simulating a streaking effect in molded plastic parts. (Abstract, Summary of Invention, CL1-L50, Fig. 1)

*Kuppermann and Miles further do not explicitly teach digital signal processing techniques such as extracting peak values, determining, setting and extracting thresholds, calculating the mean value, calculating average values, and data sampling.*

*Smith discloses digital signal processing techniques for sampled data including extracting peak values, determining, setting and extracting thresholds, calculating the mean value, calculating average values, data sampling, extracting/identifying min/max (extreme) points, digital filtering, **moving filter (shifting in processing optimize the filtering task)**, digital techniques for characterization of spatial resolution, and data compression. (Chapters 2, 3, 14, 15, 25, and 27, especially pp. 1-17, 35-39, 59, 261-275, 277-281, 481-495, Figs. 15-1 – 15-3)*

*It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kuppermann or Miles relating to the use of spectrometers (spatially-resolved) that obtain and identify data readings via reflected light for analyzing part samples, with the teachings of Feuerherm or Baba relating to a mold (with **cavity** and **gate**) for producing plastic parts (extruded) that has pre-determined topological features, and to further modify the teachings of Kuppermann or Miles with the teachings of Adachi relating to simulating a streaking effect in molded plastic parts, to realize the claimed invention. An obvious motivation exists since this area of technology is highly competitive with many spectrometer based parts analyzers available in the market place and large amounts of money being spent in product development and improvement. (See Kuppermann CL1-L50, for example) Accordingly, a skilled artisan would have made an effort to become aware of what capabilities had*

*already been developed in the market place and, hence, would have been motivated to modify the teachings of Kuppermann or Miles with the teachings of Feuerherm or Baba , and to further modify the teachings of Kuppermann or Miles, with the teachings of Adachi, and to further modify the teachings of Kuppermann or Miles with the teachings of Smith, in order to reduce development time and cost.*

***Allowable Subject Matter***

4. *Claims 1-16, 20 and 21 have now been allowed over prior art of record.*

*The following is a statement of reasons for allowance: Applicants are disclosing a method and system for identifying defects in molded parts incorporating a molding tool, a spatially-resolved spectrometer obtaining sample points, computerized post-processing, analyzing, filtering, compression, and min/max/threshold processing of data points. This has been disclosed in the prior art. However, applicant's disclosure pertaining to calculating and linearizing a quality number Q indicative of at least one of a number and intensity of streaks, from the final iteration filtered data graph where  $Q = \ln(M * \sum DL/dx)$  and where  $\sum DL/dx$  represents the sum of slopes of final iteration filtered data and M is the linearazation number (see specification page 11, lines 1-24, Fig. 5, for example), is deemed novel and non-obvious over prior art of record. This feature as defined in the specification and now recited in the independent claims is deemed novel and non-obvious over prior art of record.*

*Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably*



*accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."*

### **Conclusion**

5. *Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).*

*A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.*

*The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, careful consideration should be given prior to applicant's response to this Office Action.*

*U.S. Patent 6,002,480 issued to Izatt et al teaches the use of spectrometers in material examination.*

*U.S. Patent 5,220,403 issued to Batchelder et al teaches the use of spectrometers in material examination.*

*U.S. Patent 6,441,901 issued to McFarland et al teaches the use of spectrometers in material examination.*

*U.S. Patent 5,053,173 issued to Stict teach a molding tool with cavity and gate for extruded plastic parts.*

*"Thermal desorption behavior of absorbed material on wafer surfaces" T. Jimbo, IEEE 0-7803-3752-2/97, 1997 teaches defect detection using spectrometry.*


*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.*

*Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.*

The Official Fax Numbers are:

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May 7, 2004